SAT Report

PMN Number: **L-12-0008**
SAT Date: **10/18/2011**
Print Date: **8/19/2014**

Related cases: [redacted]

Concern levels:

Type of Concern:	Health	Eco	Comments
Level of Concern:	1	1	

Persistence	Bioaccum	Toxicity	Comments
3	3	1 Awaiting Human Health Entry Awaiting Human Health Entry Awaiting Human Health Entry	

Exposure Based Review:

Health: No
Ecotox: No

Routes of exposure:

Health: No exposures needed
Ecotox: No releases to water
Fate: ;

Keywords:

Keywords:

Summary of Assessment:

Fate:

Fate Summary: L-12-0008

FATE:
Liquid with MP < 25 C (E)
log Kow = 6.49 (E)

S = 0.003 mg/L at 25 C (E)
VP = 6.6E-1 torr at 25 C (NOMO5)
BP = 194 C (M)
H = 2.82E+6 (E)
log Koc = 8.29 (E)
log Fish BCF = 3.95 (E)
log Fish BAF = 6.05 (E)
POTW removal (%) ≥ 99 via sorption and stripping
Time for complete ultimate aerobic biodeg > mo
Sorption to soils/sediments = v.strong
Volatilization half-life from a standard river = 2 hrs
Volatilization half-life from a standard lake = 9 da
PBT Potential: P3B3
*CEB FATE: Migration to ground water = negl

Health:

Health Summary: Absorption is poor all routes based on physical/chemical properties. A similar compound, [redacted] is negative in Salmonella. No significant health concerns. Low concern.

Ecotox:

Test Organism	Test Type	Test End Point	Predicted	Measured	Comments
fish	**96-h**	**LC50**	*		
daphnid	**48-h**	**LC50**	*		
green algal	**96-h**	**EC50**	*		
fish	**_**	**chronic value**	*		
daphnid	**_**	**chronic value**	*		
algal	**_**	**chronic value**	*		
Sewage Sludge	**3-h**	**EC50**	**_**		
Sewage Sludge	**_**	**Chronic Value**	**_**		

Ecotox Values Comments:

Factors	Values	Comments
Assessment Factor	10	
Concentration of Concern (ppb)		*
SARs	neutral organic chemicals	
SAR Class	fluorocarbon	
Ecotox Category		

Ecotox Factors Comments:

SAT Chair: Becky Jones

Focus Report

New Chemicals Program

PMN Number: **L-12-0008**

Focus Date:	10/23/2011 11:00:00 PM	Report Status:	Completed
Consolidated Set:			
Focus Chair:	Rose Allison	Contractor:	Stephen Wieroniey

I. Notice Information

Submitter:	Tracerco	CAS Number:	307-08-4
Chemical Name:	1H-Fluorene, 1,1,2,2,3,3,4,4,4a,4b,5,5,6,6,7,7,8,8,8a,9,9,9a-docosafluorododecahydro-		
Use:	Tracer chemical to measure flow in deep oil-bearing strata or hydrocarbon leak measurements. P2 Claim: Petroleum producers traditionally have used radionuclide tracers to measure the flow rate in oil-bearing strata and to adjust their pumping rate to achieve desirable flow characteristics. The LVE substance is a substitute for these radionuclides. Its use will result in a reduced handling of radioactive materials by both contractors and oil production employees, as well as lower release of radioactive materials into the environment.		
Other Uses:	[redacted]		
PV-Max:	1,000 Kg/yr	Binding Option:	Yes
Manufacture:		Import:	X

II. SAT Results

(1) **Health Rating:** 1 **Eco Rating:** 1 **Comments:** ;

Occupational: 2A **Non-Occupational:** **Environmental:** 2

(1) **PBT:** 3 3 1 **Comments:**

III. OTHER FACTORS

Categories:

Health Chemical Category: Ecotox Category: neutral organic chemicals

Related Cases/Regulatory History:

Health related Cases: [redacted] (SAME COMPOUND), [redacted]

Ecotox Related Cases: Same as [redacted]. Analogs: [redacted].

Regulatory History: [redacted] (Same As)-FOCUS DROP
-FOCUS DROP
-FOCUS DROP
-GRANTED WITH CONDITION
-GRANTED WITH CONDITION

MSDS/Label Information:

MSDS:	Yes	Label:	No
General Equipment:	protective safety goggles / chemical-resistant gloves / protective clothing and boots / ensure ventilation during use		
Health Effects:	irritant to skin, eyes, and respiratory system; may have harmful effects if inhaled or swallowed		
LVEPPE:	impervious gloves / goggles / Tyvek suit		

Exposure Based Information:

Exposure Based Review:	N	Exposure Based Review (Health):	N
Exposure Based Review (Eco):	N	Exposure Based (Occupational):	No
Exposure Based Review (Non Occupatuional):		Exposure Based (Environmental):	

IV. Summary of SAT Assessment

Fate:

Fate Summary:

L-12-0008
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PBT Potential: P3B3
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Health:

Health Summary:

Absorption is poor all routes based on physical/chemical properties. A similar compound, [redacted] is negative in Salmonella. No significant health concerns. Low concern.

Ecotox:

Ecotox Values:

Fish 96-h LC50:	*(P)
Daphnid 48-h LC50:	*(P)
Green algal 96-h EC50:	*(P)
Fish Chronic Value:	*(P)
Daphnid ChV:	*(P)
Algal ChV:	*(P)

Ecotox values comments:

Predictions are based on SARs for neutral organic chemicals; SAR chemical class = fluorocarbon; MW 574; log Kow = 9.99 (ACD); liquid with mp unknown (P); pH7; effective concentrations based on 100% active ingredients and mean measured concentrations; hardness <150.0 mg/L as CaCO3; and TOC <2.0 mg/L;

Ecotox Factors:

Assessment Factor: 10
Concern Concentration:

V. Summary of Exposures/Releases

Engineering Summary: L-12-0008

Exposures/Releases	Release	Release	Release
Scenario	**Processing: Tracer Chemical Formulation**	**Processing: Tracer Chemical Formulation**	**Processing: Tracer Chemical Formulation**
Sites	**1**	**1**	**1**
Media	**Water or Incineration or Landfill**	**Air**	**Air**
Descriptor A	Conservative	Output 2	Typical
Quantity A (kg/site/day)	6.2E-1	5.5E-2	1.4E-3
Frequency A (day/year)	16	16	16
Descriptor B			Worst Case
Quantity B (kg/site/day)			1.4E-3
Frequency B (day/year)			16
From	Equipment Cleaning Losses of Liquids from a Single, Small Vessel	Equipment Cleaning Losses of Liquids from a Single, Small Vessel	Loading Liquid Product into Containers
Workers			
Exposure Type			

Engineering Summary: Exposures/Releases	Release	Release	Release
Scenario	**Processing: Tracer Chemical Formulation**	**Processing: Tracer Chemical Formulation**	**Use: Injection of Tracer Chemical into Oil-Bearing Strata**
Sites	**1**	**1**	**1**
Media	**Air**	**Water or Incineration or Landfill**	**Air**
Descriptor A	Typical	High End	Typical
Quantity A (kg/site/day)	1.3E-3	3.8E-1	4.4E-4
Frequency A (day/year)	16	16	50
Descriptor B	Worst Case		Worst Case
Quantity B (kg/site/day)	1.3E-3		4.4E-4
Frequency B (day/year)	16		50
From	Unloading Liquid Raw Material from Containers	Cleaning Liquid Residuals from Containers Used to Transport the Raw Material	Unloading Liquid Product from Containers
Workers			
Exposure Type			

V. Summary of Exposures/Releases

Engineering Summary: L-12-0008

Exposures/Releases	Release	Release	Exposure
Scenario	**Use: Injection of Tracer Chemical into Oil-Bearing Strata**	**Use: Injection of Tracer Chemical into Oil-Bearing Strata**	**Processing: Tracer Chemical Formulation**
Sites	**1**	**1**	**1**
Media	**Water or Incineration or Landfill**	**Incineration**	**Dermal**
Descriptor A	High End	Output 2	High End
Quantity A (kg/site/day)	1.2E-1	2.0E+1	7.1E+2
Frequency A (day/year)	50	50	16
Descriptor B			
Quantity B (kg/site/day)			
Frequency B (day/year)			
From	Cleaning Liquid Residuals from Containers Used to Transport the Product	Oil Production	Loading Liquid Product into Containers
Workers			3
Exposure Type			Liquid

Engineering Summary: Exposures/Releases	Exposure	Exposure	Exposure
Scenario	**Processing: Tracer Chemical Formulation**	**Processing: Tracer Chemical Formulation**	**Processing: Tracer Chemical Formulation**
Sites	**1**	**1**	**1**
Media	**Inhalation**	**Dermal**	**Inhalation**
Descriptor A	Worst Case	High End	Worst Case
Quantity A (kg/site/day)	6.7E+0	1.7E+3	6.1E+0
Frequency A (day/year)	16	16	16
Descriptor B	Typical		Typical
Quantity B (kg/site/day)	2.2E-1		2.0E-1
Frequency B (day/year)	16		16
From	Loading Liquid Product into Containers	Unloading Liquid Raw Material from Containers	Unloading Liquid Raw Material from Containers
Workers	3	3	3
Exposure Type	Vapor	Liquid	Vapor

V. Summary of Exposures/Releases

Engineering Summary: L-12-0008

Exposures/Releases	Exposure	Exposure	
Scenario	**Use: Injection of Tracer Chemical into Oil-Bearing Strata**	**Use: Injection of Tracer Chemical into Oil-Bearing Strata**	
Sites	**1**	**1**	
Media	**Dermal**	**Inhalation**	
Descriptor A	High End	Worst Case	
Quantity A (kg/site/day)	7.1E+2	6.4E+0	
Frequency A (day/year)	50	50	
Descriptor B		Typical	
Quantity B (kg/site/day)		2.1E-1	
Frequency B (day/year)		50	
From	Unloading Liquid Product from Containers	Unloading Liquid Product from Containers	
Workers			
Exposure Type	Liquid	Vapor	

VI. Focus Decision and Rationale

Regulatory Actions

Regulatory Decision: LVE Final Conditional Grant Decision Date: 10/23/2011
Type of Decision:

Rationale: L-12-0008 was given a final conditional grant based on binding to the production volume of 1000 kg/year. Human health concerns were low, and potential risks were addressed by PPE listed in the MSDS. Ecotoxicity concerns were low. Potential risks to the environment were low due no exceedances of the COC during the release period.

COC: Chronic – 21 ppb; Acute – 280 ppb

Summary of Exposures and Releases:

Processing
1 site, 16 days/year, 3 workers
Inhalation 1: Vapor: Typical: 2.2E-1 mg/day; Worst Case: 6.7E+0 mg/day
Inhalation 2: Vapor: Typical: 2.0E-1 mg/day; Worst Case: 6.1E+0 mg/day
Dermal 1: 7.1E+2 mg/day (Liquid 40%)
Dermal 2: 1.7E+3 mg/day (Liquid 98%)

Releases to Water 1: 6.2E-1 kg/site-day over 16 days/yr
Or Incineration or Landfill
Releases to Water 2: 3.8E-1 kg/site-day over 16 days/yr
Or Incineration or Landfill
Releases to Air 1: 5.5E-2 kg/site-day over 16 days/yr
Releases to Air 2: Typical: 1.4E-3 kg/site-day over 16 days/yr; Worst Case: 1.4E-3 kg/site-day over 16 days/yr
Releases to Air 3: Typical: 1.3E-3 kg/site-day over 16 days/yr; Worst Case: 1.3E-3 kg/site-day over 16 days/yr

Fate Releases to Water (99% Removal):
SWC: 1.85 ppb
DW: LADD: 6.76E-08 mg/kg/day; ADR: 8.91E-05 mg/kg/day
FI: LADD: 2.57E-06 mg/kg/day; ADR: 3.15E-03 mg/kg/day
>COC (1000 ppb): 0/16 release days

Fate Release to Air:
Stack Air: LADD: 4.34E-06 mg/kg/day; ADR: 1.24E-03 mg/kg/day
Fugitive Air: LADD: 2.03E-06 mg/kg/day; ADR: 1.45E-03 mg/kg/day

Use:
1 site, 50 days/year, 3 workers
Inhalation: Vapor: Typical: 2.1E-1 mg/day; Worst Case: 6.4E+0 mg/day
Dermal: 7.1E+2 mg/day (Liquid 40%)

Releases to Water: 1.2E-1 kg/site-day over 50 days/yr
Or Incineration or Landfill
Releases to Air: Typical: 4.4E-4 kg/site-day over 50 days/yr; Worst Case: 4.4E-4 kg/site-day over 50 days/yr
Releases via Incineration: 2.0E+1 kg/site-day over 50 days/yr

Fate Releases to Water (99% Removal):
SWC: 1.13 ppb
DW: LADD: 1.15E-07 mg/kg/day; ADR: 5.17E-05 mg/kg/day

FI: LADD: 4.39E-06 mg/kg/day; ADR: 1.72E-03 mg/kg/day
>COC (1000 ppb): 0/50 release days

Fate Release to Air:
Stack Air: LADD: 2.73E-04 mg/kg/day; ADR: 2.57E-02 mg/kg/day
Fugitive Air: LADD: 4.85E-08 mg/kg/day; ADR: 1.10E-05 mg/kg/day

P2 Rec Comments:

Testing:

Final Recommended:

Health:
Eco:
Fate:
Other: